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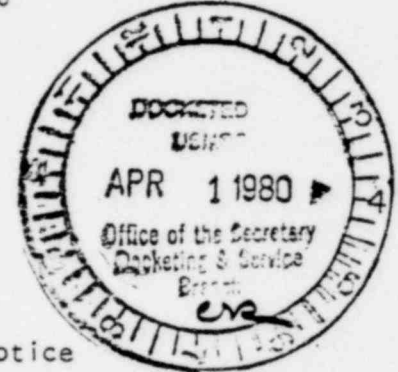
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March 28, 1980

Mr. Samuel J. Chilk, Secretary
U. S. Nuclear Regulatory Commission
Docketing and Service Branch
Washington, D. C. 20555

Dear Mr. Chilk:

Subject: Detroit Edison Response to the Advance Notice
of Rulemaking Regarding the Nuclear Plant
Reliability Data System



Detroit Edison would like to take this opportunity to submit written comments on the Advanced Notice of Rulemaking regarding the Nuclear Plant Reliability Data System (NPRDS) as published in the January 30, 1980 Federal Register, pages 6793 through 6795. We have a vital interest in this action because of our intended voluntary participation in the System.

We are opposed to regulations making NPRDS mandatory and involving this industry developed and supported data system in the regulatory process. Detroit Edison believes that the proper role of the Nuclear Regulatory Commission (NRC) should be as a participant in the ANSI N18-20 Subcommittee deliberations and as a major user of the data base.

The Report of the President's Commission on The Accident at Three Mile Island and NUREG-0585 do not provide sufficient justification for mandatory NPRDS participation when factors such as additional industry costs, limited expected safety benefits, and duplication with the NRC's Licensing Event Report (LER) system are considered. Needed is not a more extensive collection of data but, rather, a more comprehensive utilization of the data from existing sources. Mandatory participation in the System may add more information to the existing data system, but present utilization of that data cannot justify the disadvantages associated with mandatory participation. The System should not be made mandatory until increased utilization of the data can be demonstrated.

The Special Review Group of the NRC's Office of Inspection and Enforcement did indicate in NUREG-0610 that they felt mandatory participation would provide a more comprehensive and complete data base for evaluating reliability and for early identification of failure trends. While we acknowledge that mandatory participation would

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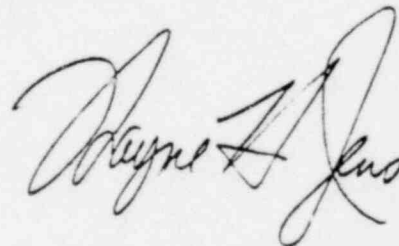
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result in an increased amount of data, we do not believe it follows that mandatory participation would result in lasting improvement in the quality of the data. This improvement in participation, reporting consistency, and accuracy can only be achieved by continued demonstration that the data is important and that it is being used to enhance the safety and reliability of our nuclear generating plants.

At question is the management and the quality of the data basis. It is our belief that if the management of the NPRDS reporting were the responsibility of an organization such as the Institute of Nuclear Power Operations (INPO) or the Nuclear Safety Analysis Center (NSAC), the needs of the industry, the public and the government would be better served. Given the proper tools, INPO or NSAC could organize the utility industry under an effective and useful NPRDS program based on the recommendations of the ANSI N18-20 Subcommittee. The utility sponsored organization could implement consistent reportable scope, responsive reporting, program quality assurance and meaningful analysis. Although mandatory participation may eventually satisfy the above needs, it would not be the most efficient method.

The attached responses are offered in reply to the 21 specific questions listed in the Federal Register. Detroit Edison would be pleased to discuss these responses in more detail if that is desired.

Sincerely,

A handwritten signature in cursive script, appearing to read "Wayne F. Lus".

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attach.

VPNO-80-77

DETROIT EDISON RESPONSES TO QUESTIONS POSED
BY ADVANCE NOTICE OF PROPOSED RULEMAKING
REGARDING THE NUCLEAR PLANT RELIABILITY DATA SYSTEM

Question No. 1

How should NPRDS effort be apportioned between improving plant availability and improving plant safety? Where should the emphasis be?

Response

Plant safety and availability are both very important and cannot be easily separated. The priority should be placed on plant safety first and availability second. By emphasizing plant safety in the NPRDS effort, more reliable components and systems naturally would lead to an increase in plant availability. Increases in plant availability would demonstrate the necessary cost-benefit ratio to encourage the system to be expanded at a later date to include non-safety related components.

Question No. 2

How should NPRDS data be used by industry, the public and the NRC to achieve this emphasis? What other uses, if any, should be made of NPRDS data?

Response

The NPRDS data should be used by the utility industry to:

1. Improve component and system reliability.
2. Verify the adequacy and efficiency of surveillance test schedules.
3. Assist in identifying failure trends and wearout patterns.
4. Update the plant preventive maintenance program to improve reliability and availability.
5. Update and verify spare part requirements.

The public should use NPRDS data to provide answers to safety questions concerning the production of electricity and to place in perspective public acceptance of risk of producing electricity from nuclear power plants as compared with other alternative sources.

The NRC should use NPRDS data as a source of failure rates for components and systems in their Integrated Reliability Evaluation Program and in the development of regulatory guides for surveillance testing of safety related equipment or refining of plant technical specifications.

Question No. 3

How should NPRDS data be gathered and analyzed to facilitate recommended uses?

Response

NPRDS data should be gathered under the existing framework of the NPRDS Reporting Procedures Manual. Improvement of data reporting should be made through the ANSI N18-20 Subcommittee. Analysis of data should be done by an organization like the Institute of Nuclear Power Operations (INPO) or the Nuclear Safety Analysis Center (NSAC). Analysis supported by the utility industry done by INPO would reduce the staffing requirements at each utility plant. INPO could then concentrate the utility resources to provide the analysis and each utility would then be required to staff only to resolve "alerts" as discussed in Question No. 4. INPO or NSAC could also provide the necessary industry-wide quality assurance to the NPRDS effort which is presently missing.

Question No. 4

Who should alert appropriate persons concerning problems uncovered from analysis of NPRDS data? Who should initiate design, maintenance, or operating improvements?

Response

If the identified problem results from analysis by organizations such as NRC, INPO, EPRI or a NSSS vendor, that organization should take the lead in notifying the industry. Suspected generic problems identified by organizations such as the utility, manufacturer, or consultant should be referred to the more broadly based industry organization such as INPO for review of the generic implications and the need for an "alert." All safety related problems uncovered should be reported to the NRC by the appropriate vendor or the utility under 10CFR21.

Question No. 5

What systematic analysis is conducted currently by licensees and the public? To what extent and for what purpose should each licensee, the NRC and the public analyze data?

Response

Although Detroit Edison is planning on being an active NPRDS member, to date no engineering data has been submitted. But to require each licensee to analyze NPRDS data would be a needless duplication of effort. As discussed in Question No. 3, this data analysis could be more effectively accomplished by a utility sponsored organization such as INPO or NSAC. This approach would allow each utility to perform analyses on data from its own plant and any specialized analysis using the NPRDS data base to meet its own needs.

Question No. 6

If NPRDS reporting is made mandatory, what form of NPRDS management (i.e., industry, NRC or joint industry/NRC) will best lead to fully responsive reporting and to meaningful analysis?

Response

NPRDS reporting should not be made mandatory. The management should be based upon input from the utility industry and the government. Management of the NPRDS reporting should be done by INPO which would internally regulate each utility's NPRDS program for the common good of all of them. INPO would then be responsible for organizing the utility industry under an effective and useful NPRDS program based on the recommendations of the N18-20 Subcommittee. The organization could then implement responsive reporting and meaningful analysis as discussed in Question Nos. 4 and 5.

Question No. 7

To what extent, if any, should the NRC manage NPRDS reporting and data analysis?

Response

Under the present management of NPRDS, the NRC has representatives on the N18-20 Subcommittee. This participation is adequate in providing the NRC with a mechanism for constructive input. Management of the system by the NRC would cause the system to become a licensing issue which would result in the NRC and the utility staffs increasing their manpower to cope with increased regulation. On the other hand, this expenditure of resources to an organization such as INPO could be channeled to the analysis of data, the real purpose of the NPRDS program. What is needed is better utilization of data through demonstration of the importance of the data, identification of enhanced safety and reliability, and improvement in communication among users--not more regulation.

Question No. 8

If NPRDS reporting is mandatory, how should the NRC inspect and enforce mandatory licensee participation? Should licensees be subject to enforcement penalties for noncompliance with NPRDS requirements?

Response

NPRDS reporting should not be made mandatory to the extent of enforcement by the NRC. In Question No. 6, it was suggested that a utility supported organization such as INPO should manage NPRDS reporting. This organization, as part of its management function, would require participation in the NPRDS effort and provide the necessary standards of compliance. INPO would internally regulate each utility's NPRDS program. This approach, if adopted, would require utility industry to regulate itself and would provide the following advantages:

1. Standard scoping of NPRDS reportable items.
2. Concentrated analysis of NPRDS reportable data.
3. Responsive analysis reporting of generic problems to the utilities of concern.

4. Reduced staffing requirements for the utility industry and the NRC.
5. Industry-wide quality assurance to the NPRDS effort.

Question No. 9

What improvements should be made to the NPRDS Manual or other guiding vehicle to enhance uniformity of reportable scope, completeness and accuracy of reporting, and usability of the data?

Response

As of November 26, 1979, the status report for the NPRDS shows 36 utility participants with 60 plants. There is very little consistency in the reportable scope from one plant to the next. The median value is about 3000 components per unit. This lack of consistency should be addressed by the N18-20 Subcommittee to define rules and procedures to improve the NPRDS Procedures Manual. The mechanism to provide changes already exists in the N18-20 Subcommittee.

Completeness and accuracy of reported data can be greatly improved through utility internal regulation by an organization such as INPO. What is needed is an industry quality assurance program for NPRDS reporting. A data quality assurance program should cover activities such as data acquisition, review of data, software interfaces, changes to data, and revision of engineering data. This program could be implemented by INPO with agreement by the utilities to include these activities in their quality assurance programs.

Usability of the data cannot be regulated or enforced. Participation should be made mandatory only after adequate resources are available to use the data and useful programs are identified. Considerable effort on a voluntary basis has been expended, and it will take many years of data collection to generate a viable data base. The analysis which will be performed by INPO, as discussed in Question No. 3, will contribute to the demonstration of usefulness and will accelerate added uses among the utilities and manufacturers. In summary, usefulness of the data will increase with time.

Question No. 10

Any data gathering system needs feedback to maintain and upgrade system capability in the face of changing events, methodological advances, and other factors. Feedback is particularly necessary to modify data-gathering activity upon which the whole analytical system rests. What feedback features, if any, should be addressed by rulemaking?

Response

A feedback system already exists in the form of the ANSI N18-20 Subcommittee. In addition, several users workshops have been conducted by the Southwest Research Institute. Therefore, feedback should not be addressed under rulemaking. Additional valuable feedback from INPO and the NRC should be sufficient to maintain and upgrade the system capability.

Question No. 11

Should the NPRDS and LER system be restructured to avoid overlapping data-gathering requirements or should present system formats be retained?

Response

The NPRDS and LER system should be restructured to avoid overlapping data-gathering requirements. Technically it is quite feasible to combine the two data bases. In the long run, a single data base should result in reduced maintenance of the files, reduction in computer processing time, fewer computer programs, simplicity in management, and reduction in manpower. One method of combining the two data bases would be to use the existing software of one of the systems. The entire NPRDS data base contains significantly more data than is found on just the NPRD - 4 form. On the other hand, the LER data base is comprised entirely of data contained on the LER form. Therefore, if one system is to "absorb" the other, it seems that the NPRDS would be more suited to absorb the LER data.

Question No. 12

In the event you recommended eliminating duplication between LER and NPRDS reporting, how would you restructure each system's reporting requirements? Comment specifically on the idea expressed in summary paragraph 8 of limiting LER reporting to items of major safety significance. Should such restructuring be done simultaneously with making NPRDS reporting mandatory or should ongoing NPRDS and LER upgrading efforts continue separately?

Response

The question of restructuring was answered in the response to Question No. 11. However, the need still exists to have a rapid reporting method for reporting significant events. The existing NPRDS form 4 could be revised to accomplish rapid reporting, meeting the requirements of the NPRDS and the requirement of the existing LER system. If this method is unacceptable, then the approach outlined in paragraph 8 of the advance notice of proposed rulemaking would be a beneficial alternative.

Effort should begin immediately to eliminate unnecessary duplicate reporting between the LER and the NPRDS reporting systems. However, both systems should be maintained intact for a specified period of time after NPRDS reporting is made mandatory to ensure no loss of safety related data.

Question No. 13

Do you agree with the summary paragraph 2 estimate of a minimum of 3500 components as an appropriate scope? Assuming a reportable scope of 3500 components, how many NPRDS failure reports should be expected per month per operating plant?

Response

Thirty-five hundred components appears to be a fair estimate of the number of components to comprise an appropriate scope as now defined in the NPRDS Reporting Procedures Manual. However, the major thrust of the rest of the advance notice of proposed rulemaking implies a revision of that scope. The NRC staff is known to favor an expansion of the reportable scope to include all safety related and some nonsafety related equipment. If this approach is adopted, as discussed in summary paragraph 6, then our estimate is about 7000 reportable components per unit.

Assuming a reportable scope of 3500 components, approximately five failure reports should be expected per month per operating plant. This value is not based on Detroit Edison's operating experience but represents an estimate of the company's anticipated activity.

Question No. 14

Should the scope of systems and components presently summarized by the NPRDS Manual be expanded or contracted and, if so, in what areas?

Response

Some change in the scope of reporting to NPRDS is expected as a result of the ANSI N18-20 Subcommittee efforts. TMI-2 related investigations have indicated the need to look carefully at various currently nonreportable components in proximity to the primary or emergency core cooling systems.

Question No. 15

Do the costs of preparing and submitting failure reports differ between the LER and NPRDS systems? What do you estimate these costs to be?

Response

This response should come from utilities with operating experience.

Question No. 16

Are the per-plant figures of \$75,000 to \$200,000 for one-time development of NPRDS engineering data and \$50,000 for annual NPRDS reporting considered valid or are these figures understated or overstated?

Response

Detroit Edison is planning to collect initial data on the NPRDS program during the summer of 1980. One-time development cost of NPRDS engineering data is estimated at \$100,000 for 3500 components. For 7000 components, a one-time cost of \$220,000 would be anticipated due to increased labor costs. The annual

operating cost of this program under existing conditions of a voluntary program is estimated at \$75,000 to cover the salary cost for failure report preparation and analysis of the NPRDS data base.

Question No. 17

What alternatives to mandatory reporting would provide the data necessary for complete and accurate reliability analysis and at what level of assurance?

Response

It is a fundamental flaw to assume that for a data base to be useful it must represent 100 percent of the potential data base. While this is probably true for a regulatory data base upon which enforcement actions are based, it very definitely is not true for a long-term statistical data base such as NPRDS.

Detroit Edison fully supports the concept of 100 percent enthusiastic reporting by the utilities but not at the expense of involving this long-term reliability data base in the regulatory process with attendant legal, political, inspection and enforcement activities.

Accuracy of the data is, of course, of prime importance. The ANSI N18-20 Subcommittee and the NPRDS contractor, Southwest Research Institute, have taken steps to enhance the accuracy of data submittals. A few of these efforts include an edit check of the engineering data via computer, a comprehensive 100 percent check of failure reports by the NPRDS contractor, conducting yearly training seminars and establishing working groups. Further improvements in accuracy will come with feedback resulting from the increased usage of the data by the NRC and INPO.

Question No. 18

Do the benefits to the utility and the public of improved availability and increased reactor safety warrant the cost of the NPRDS or is there a less costly way to realize equivalent benefits in regulatory action?

Response

The NPRDS effort is and should continue to be directed at improving nuclear plant safety. It is our best judgment that the system has a positive cost-benefit ratio although it is not possible to determine the value. Making the NPRDS mandatory may increase its benefits but will certainly increase its cost.

Question No. 19

How should the NPRDS be funded? Should industry fund fully or should the NRC contribute funds to support the industry system?

Response

We believe that NPRDS funding should continue to come primarily from the utilities but partial funding from the NRC in recognition of their participation in and use of the program is appropriate. In addition to the annual funds provided to the NPRDS contractor, the major cost of the NPRDS will continue to be borne by the utilities through their efforts in supplying data to the system.

Question No. 20

Should the six early-design plants, excluded when NPRDS commenced, continue to be excluded or should all plants be required to participate?

Response

The six early-design plants were excluded when the NPRDS commenced because of technical reasons. These early plants were unique in design and were each one of a kind. Inclusion of data from these plants would not truly represent subsequently built plants. Therefore, they should not now be included.

Question No. 21

Certain operator errors must now be reported within the scope of the LER system. Furthermore, NPRDS reports sometimes include corresponding human error information. To what extent, if any, should an improved NPRDS collect man-machine interface data and perform reliability analyses which consider human factors?

Response

If failures are caused by operation or maintenance errors, the NPRDS is designed to record that cause and effect. Human errors which do not result in a system or component failure need to be addressed by the ANSI N18-20 Subcommittee.

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